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| EXAMINER |
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HOMAYOUNMEHR, FARID

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| ART UNIT | PAPER NUMBER |
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2132

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06/21/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/625,235

Applicant(s)

MORAN ET AL.

Examiner

Farid Homayounmehr

Art Unit

2132

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18, 23, 25, 26, 29 and 31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18, 23, 25, 26, 29, and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responsive to communications: application, filed 7/22/2003; amendment filed 4/11/2007.
2. Claims 1-18, 23, 25, 26, 29, and 31 are pending in the case.

Response to Arguments

3. **Restriction/Election Requirement**

Applicant's request to rejoin Group I and Group II claims in the event of allowance of claim s of Group I is denied. The claims of Group I include limitations directed to pores containing magnetic material. The common element between claims of Group I and Group II is the pores containing material. If Group I included a claim directed to pores containing material, without specific limitation that identified the material being electric or magnetic, applicant's request to join the Groups in case of allowance of such claim would have been accepted. However, Group I claims are directed to pores, which specifically, contain magnetic material. Therefore, applicant request to rejoin is denied.

4. **Rejection under Section 102(b)**

Art Unit: 2132

Applicant argues Suzuki does not disclose a tag having pores, by citing that the UV-curable resin does not have pores in it. However, Suzuki teaches magnetic cards, which as indicated by Fig. 17A and associated text includes grooves (pores) that contain magnetic material.

Applicant further argues that groove 83 does not fall within the conventional meaning of the term "pore". Applicant uses the definition of a pore from Merriam-Webster dictionary (cited from www.m-w.com), which is as follows:

1: a minute opening especially in an animal or plant; *especially*: one by which matter passes through a membrane

2: a small interstice (as in soil) admitting absorption or passage of liquid

Therefore, as the applicant uses pores to contain the magnetic material, applicant's use of the word "pore" is not limiting more than its general meaning of a minute opening. A groove is a minute opening. Merriam-Webster dictionary defines groove as a long narrow channel or depression. A long narrow channel is a minute opening. Therefore, in the context of the current invention, a groove is equivalent to a pore.

Applicant further refers to their definition of pore in their paragraphs [0033] and [0034], and argues that a groove does not fit within the range of sizes exemplified in the mentioned paragraphs. However, the cited paragraphs state that the size of pores are tunable, and admits that the wide range of pores provides flexibility in daily use of the

Art Unit: 2132

invention. Therefore, it is not clear which range the applicant is referring to, and more importantly, why a groove does not fit within the range. In addition, the claim language of claim 1 is completely silent about the size of pores.

Applicant further argues: "Even if the depressions in the adhesive layer are considered as pores, they are not pre-formed in the host material, and then subsequently filled with magnetic material as required in amended claim 1." However, Suzuki col. 11, lines 33-40 shows that the magnetic material is embedded in the grooves of the base material. As another example, col. 14, lines 38-43 shows that the coding strip is embedded in the groove, and lines 44-50 shows that the coding strip (which included the magnetic material) is disposed adjacent to the bottom of the groove.

Applicant further argues: "Suzuki neither discloses nor suggests the use of inherent disorder in the tag to provide coding information." Claim language is silent about inherent disorder of the tag. Suzuki relies on the disorder in the magnetic fields read from magnetic particles embedded in the groove. Col. 2 lines 26-34 shows that the basis of coding information is in localized regions of different concentrations (disorders) of magnetic particles. Fig 10 and associated text also shows magnetic particles with different coercivity used for coding information. Therefore, Suzuki teaches the use of disorder in coding information.

5. Rejection under Section 103(a)

Art Unit: 2132

Applicant's argument is based on their assumption that Suzuki does not teach the pre-formed pores. However, as discussed above Suzuki does teach pre-formed pores.

Based on the above discussion, applicant's arguments are found non persuasive.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-14, 16-18, 23, 25, 26, 29, and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki (US Patent No. 5972438, dated October 26, 1999).

7.1. As per claim 1, Suzuki is directed to a method of identifying an object having identification information, said identification information being used to verify the identity of the object (column 1 line 10-20), said method comprising:
determining at least one characteristic of a magnetic field of at least a portion of a tag, thereby obtaining a first specific magnetic signal (for example, column 7 line 43-60), wherein the tag comprises a substantially non-magnetic host material (column 7 line 60-65) having pre-formed pores (Fig. 17(A) shows grooves, where the magnetic material is

Art Unit: 2132

embedded. Also col. 14, lines 38-43 shows that the coding strip is embedded in the groove, and lines 44-50 shows that the coding strip (which included the magnetic material) is disposed adjacent to the bottom of the groove), wherein at least some of the pores have been filled with a magnetic material (Fig. 17(A) and associated text (including column 11 line 33-36), see also column 2 line 14-34) , and storing signal information relating to said first specific magnetic signal, said stored signal information forming the identification information of the object (column 1 line 20-31).

7.2. As per claim 2, Suzuki is directed to the method of claim 1, wherein the step of determining at least one characteristic of said magnetic field of the at least one portion of said tag comprises a measurement of said characteristic of the site-specific magnetic field over a surface of said portion of the tag, thereby mapping a magnetic fluctuation signal (column 31 line 52 to column 32 line 5).

7.3. As per claim 3, Suzuki is directed to the method of claim 1, wherein storing signal information relating to the first specific magnetic signal comprises storing data corresponding to the at least one characteristic of said magnetic field over said portion of the tag (column 31 line 52 to column 32 line 5 shows measurement of data recorded on the card, therefore, data must have been stored before reading).

7.4. As per claim 4, Suzuki is directed to the method of claim 1, further comprising: subsequently determining the at least one characteristic of the magnetic field of said

Art Unit: 2132

portion of the tag, thereby obtaining a second specific magnetic signal, and comparing said second specific magnetic signal with the previously stored identification information (column 31 line 52 to column 32 line 5 shows that the data read from the card was verified to determine if it was altered, therefore, the data must have been compared with a stored data) .

7.5. As per claim 5, Suzuki is directed to the method of claim 4, further comprising: magnetizing the tag prior to each determination of the at least one characteristic of the magnetic field of said portion of the tag (column 13 line 50 to 55, where the biasing is actually magnetizing the magnetic field).

7.6. As per claim 6, Suzuki is directed to the method of claim 1, further comprising: recording information on the tag by magnetizing the magnetic material present in groups of pores into poled domains, or patterning pores of the tag with magnetic material (column 7 line 11 to column 8 line 48).

7.7. As per claims 7 and 8, Suzuki is directed to the method of claim 1, wherein the tag is attached to the object to be identified before or after obtaining the first specific magnetic signal (Suzuki's magnetic layer (column 1 line 20 to 50) is the identifier and it can be attached to any object to identify the object in association with the magnetic layer, either before or after the identifying signal is obtained).

7.8. As per claim 9, Suzuki is directed to the method of claim 1, wherein the tag comprises a substrate supporting the host material (Fig. 1 to 3 and associated text).

7.9. As per claim 10, Suzuki is directed to the method of claim 9, wherein the substrate comprises material selected from the group consisting of metal, silicon, silica, glass, plastic, ceramic and combinations thereof (column 15 line 15 to 25 shows the binder, which is part of the substrate can be made from Silica, Silicone or other material).

7.10. As per claim 11, Suzuki is directed to the method of claim 1, wherein the host material is selected from the group consisting of alumina, zeolites, group III-V materials, polymers, silicon oxide, zinc oxide and tin oxide (column 12 line 8 to 15).

7.11. As per claims 12 and 13, Suzuki is directed to the method of claim 1, wherein the host material comprises nanotubes cast within a second host material (per application specification, nanotubes are cast in the medium to create a barcode pattern to encode data. Suzuki Fig. 6 and associated text is directed to barcodes (item 4a) implemented in the medium).

7.12. As per claim 14, Suzuki is directed to the method of claim 1, wherein the magnetic material is selected from the group consisting of Fe, Ni, Co, their alloys, oxides, mixtures and combinations thereof (column 12 line 9-15).

7.13. As per claim 16, Suzuki is directed to the method of claim 1, wherein the tag further comprises at least one coating layer (see for example column 25 line 25-30).

7.14. As per claim 17, Suzuki is directed to the method of claim 1, wherein said at least one characteristic of the magnetic field of the portion of the tag is highly dependent on the disorder of the tag (Suzuki's magnetic characteristic is defined by the recording of information on the magnetic media, as described in for example column 17 line 10 to column 18 line 37).

7.15. As per claim 18, Suzuki is directed to the method of claim 17, wherein the disorder is due to a feature selected from the group consisting of pore size, shape and orientation of pores, percentage of pore filling, crystal orientation of magnetic material in the tag, and combinations thereof (column 17 line 46 to column 31 line 52 provides 12 different examples where the disorder (alignment of magnetic particles after recording) is dependent on the type and concentration of particles, and orientation of the magnetic field, etc).

7.16. Limitations of claims 23, 25, 29 and 31 are substantially the same as claims 1-18 above.

7.17. As per claim 26, the limitation of said coating layer comprises a material which

Art Unit: 2132

has a bulk yield stress greater than 50 MN/m^2 is a design choice for hard material (see applicant's specification paragraph 52). Suzuki teaches a tamper proof identification card which inherently requires a hard covering to resist tampering.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (US Patent No. 5972438, dated October 26, 1999).

9.1. As per claim 15, Suzuki is directed to the method of claim 1, but it does not specifically determine the diameter of the pores. However, barring any unexpected results, the diameter range of 100 nm to 500 nm would have been an obvious choice for a person skilled in art trying to implement the invention. This is because the thickness of the coding layer of Suzuki was disclosed to be in the range of 1 micron, which is equivalent to 1000 nm (see column 26 line 3). Note that Suzuki's puts perturbations filled with magnetic particles within the coding layer, therefore, the perturbations must be much smaller than 1000 nm to fit in the coding layer.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Farid Homayounmehr whose telephone number is (571) 272-3937. The examiner can be normally reached on 9 hrs Mon-Fri, off Monday biweekly.

Art Unit: 2132

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on (571) 272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Farid Homayounmehr

6/19/2007



**KAMBIZ ZAND
SUPERVISORY PATENT EXAMINER**